



The Quantum Pitch Heist

Grade 6 math · Fractions of a number, Multiplication, Multi-step word problems, Percentages · Reading level grades 5-6

Detective: _____ **Date:** _____

During the high-stakes Apex Science Cup, the experimental Quantum Match Ball vanished from the laboratory court! Head Physics Coach Marcus called in detective analytics to review biometric data and unmask the saboteur before game time.

1. Solve each math problem. The answer is a number, and the letter beside it is what that number stands for.
2. In the clue boxes, write that letter in every box showing the same number, then read the secret clue.
3. Use each clue to cross suspects off the list. The one suspect left at the end is the culprit!

My answer: the Saboteur is _____

Possible suspects

Cross off a row as each clue rules it out. The one left at the end is the culprit.

NAME	SIGNATURE MOVE	TECH GEAR	DOMINANT HAND	HAIR COLOR	VULNERABILITY
Doc Brown	Kinetic Bounce	Thermal Vest	Left Handed	Bright Silver	High Pitch Whistle
Ben Stokes	Sonic Hook Shot	Force Wristband	Left Handed	Jet Black	Static Electricity
Sue Bird	Gravity Dribble	Gyro Gloves	Left Handed	Neon Green	Static Electricity
Meg Lanning	Sonic Hook Shot	Radar Visor	Left Handed	Bright Silver	Bright Flashlight
Marcus Vance	Sonic Hook Shot	Force Wristband	Left Handed	Neon Green	Bright Flashlight
Rashid Khan	Kinetic Bounce	Jet Sneakers	Left Handed	Bright Silver	Bright Flashlight
Ellyse Perry	Sonic Hook Shot	Gyro Gloves	Right Handed	Jet Black	Bright Flashlight
Elena Delle Donne	Magnet Catch	Jet Sneakers	Right Handed	Neon Green	Static Electricity
Caitlin Clark	Magnet Catch	Jet Sneakers	Left Handed	Bright Silver	High Pitch Whistle
Giannis Antetokounmpo	Sonic Hook Shot	Force Wristband	Right Handed	Jet Black	High Pitch Whistle
Maya Patel	Gravity Dribble	Thermal Vest	Right Handed	Jet Black	Bright Flashlight
Jasprit Bumrah	Laser Spin	Radar Visor	Right Handed	Bright Silver	Bright Flashlight
LeBron James	Laser Spin	Force Wristband	Right Handed	Bright Silver	Static Electricity
Virat Kohli	Laser Spin	Jet Sneakers	Left Handed	Neon Green	Static Electricity
Professor Oakley	Kinetic Bounce	Thermal Vest	Right Handed	Jet Black	High Pitch Whistle
Smriti Mandhana	Laser Spin	Radar Visor	Left Handed	Neon Green	High Pitch Whistle
Maya Moore	Gravity Dribble	Radar Visor	Left Handed	Neon Green	Static Electricity
Nat Sciver	Kinetic Bounce	Jet Sneakers	Left Handed	Neon Green	High Pitch Whistle
Luka Doncic	Magnet Catch	Thermal Vest	Left Handed	Neon Green	High Pitch Whistle
Serena Vance	Sonic Hook Shot	Thermal Vest	Left Handed	Neon Green	Static Electricity
Liam Thorne	Gravity Dribble	Force Wristband	Left Handed	Neon Green	Static Electricity

CLUE 1
Fractions of a number

To decode the first vault keypad, calculate the fraction of power cells remaining in the arena grid.

Solve each problem, then write its letter in every clue box that shows the same number.

T																	T
22	27	2	37	25	10	10	17	25	29	13	38	2	24	29	38	22	

30	2	17	26	4	11	26	38	4	10	38	37	2	24			

$2/4 \text{ of } 44 = \square \rightarrow \text{T}$

$3/10 \text{ of } 90 = \square \rightarrow \text{H}$

$1/6 \text{ of } 66 = \square \rightarrow \text{Y}$

$2/6 \text{ of } 114 = \square \rightarrow \text{O}$

$2/8 \text{ of } 148 = \square \rightarrow \text{V}$

$6/10 \text{ of } 50 = \square \rightarrow \text{W}$

$2/8 \text{ of } 68 = \square \rightarrow \text{A}$

$2/10 \text{ of } 120 = \square \rightarrow \text{S}$

$1/10 \text{ of } 100 = \square \rightarrow \text{L}$

$2/10 \text{ of } 65 = \square \rightarrow \text{D}$

$4/6 \text{ of } 39 = \square \rightarrow \text{R}$

$1/8 \text{ of } 32 = \square \rightarrow \text{G}$

$3/6 \text{ of } 58 = \square \rightarrow \text{N}$

$1/10 \text{ of } 20 = \square \rightarrow \text{E}$

$2/8 \text{ of } 100 = \square \rightarrow \text{I}$

Scratch space:

CLUE 2

Multiplication facts (1-12)

The stadium sensors tracked repeated energy pulses from the stolen ball across several court sectors.

Solve each problem, then write its letter in every clue box that shows the same number.

A						A											A	
3	63	70	54	108	77	3	11	64	70	64	15	60	45	11	108	21	3	20
											A							
63	70	54	108	56	11	108	77	70	15	3	11	70	63					

$1 \times 3 = \square \rightarrow \boxed{\text{A}}$

$5 \times 4 = \square \rightarrow \boxed{\text{S}}$

$9 \times 5 = \square \rightarrow \boxed{\text{I}}$

$12 \times 9 = \square \rightarrow \boxed{\text{T}}$

$8 \times 8 = \square \rightarrow \boxed{\text{D}}$

$1 \times 11 = \square \rightarrow \boxed{\text{N}}$

$6 \times 9 = \square \rightarrow \boxed{\text{F}}$

$8 \times 7 = \square \rightarrow \boxed{\text{O}}$

$7 \times 11 = \square \rightarrow \boxed{\text{H}}$

$7 \times 10 = \square \rightarrow \boxed{\text{E}}$

$7 \times 3 = \square \rightarrow \boxed{\text{W}}$

$3 \times 5 = \square \rightarrow \boxed{\text{P}}$

$9 \times 7 = \square \rightarrow \boxed{\text{L}}$

$10 \times 6 = \square \rightarrow \boxed{\text{R}}$

Scratch space:

CLUE 3

Multi-step word problems

Analyzing the lab telemetry requires calculating total velocity adjustments after several complex court tests.

Solve each problem, then write its letter in the boxes to fill in the missing word.

Someone scared the villain off with

S **R** **Y** .

83 13 49 13 15 59 39 65 39 59 13 15 59 15 13

Head Analyst Dr. Reed filled 2 boxes with 2 smart basketballs each, then found 79 more smart basketballs. How many smart basketballs are there in all?

Answer: → **S**

Head Analyst Dr. Reed collected 14 data tablets in the morning and 181 data tablets in the afternoon, then split them equally among 5 Kinetic Dome Lab Squad. How many data tablets did each get?

Answer: → **E**

Head Analyst Dr. Reed collected 38 trajectory trackers in the morning and 1 trajectory trackers in the afternoon, then split them equally among 3 Kinetic Dome Lab Squad. How many trajectory trackers did each get?

Answer: → **T**

There were 72 trajectory trackers in all. 3 Kinetic Dome Lab Squad used 14 trajectory trackers each. The other 2 Kinetic Dome Lab Squad shared the rest equally. How many trajectory trackers did each of the other Kinetic Dome Lab Squad get?

Answer: → **I**

There were 312 kinetic pads in all. 2 Kinetic Dome Lab Squad used 38 kinetic pads each. The other 4 Kinetic Dome Lab Squad shared the rest equally. How many kinetic pads did each of the other Kinetic Dome Lab Squad get?

Answer: → **C**

Head Analyst Dr. Reed collected 81 trajectory trackers in the morning and 213 trajectory trackers in the afternoon, then split them equally among 6 Kinetic Dome Lab Squad. How many trajectory trackers did each get?

Answer: → **A**

There were 552 data tablets in all. 32 data tablets were set aside. The rest were shared equally among 8 Kinetic Dome Lab Squad. How many data tablets did each get?

Answer: → **L**

Scratch space:

CLUE 4 Percentages

To narrow down the suspect radar log, determine the percentage of biometric matches scanned at the gate.

Solve each problem, then write its letter in every clue box that shows the same number.

N			N					N									N		
19	24	39	19	12	32	24	24	19	8	4	40	32	42	29	32	4	19	43	42
					N														
45	24	32	24	39	19	29	8	24	7	9	39	39	32						

$25\% \text{ of } 76 = \boxed{} \rightarrow \boxed{\text{N}}$

$75\% \text{ of } 12 = \boxed{} \rightarrow \boxed{\text{L}}$

$10\% \text{ of } 240 = \boxed{} \rightarrow \boxed{\text{E}}$

$75\% \text{ of } 60 = \boxed{} \rightarrow \boxed{\text{W}}$

$25\% \text{ of } 172 = \boxed{} \rightarrow \boxed{\text{D}}$

$20\% \text{ of } 35 = \boxed{} \rightarrow \boxed{\text{F}}$

$25\% \text{ of } 16 = \boxed{} \rightarrow \boxed{\text{A}}$

$10\% \text{ of } 400 = \boxed{} \rightarrow \boxed{\text{I}}$

$40\% \text{ of } 20 = \boxed{} \rightarrow \boxed{\text{H}}$

$5\% \text{ of } 780 = \boxed{} \rightarrow \boxed{\text{O}}$

$50\% \text{ of } 64 = \boxed{} \rightarrow \boxed{\text{R}}$

$25\% \text{ of } 116 = \boxed{} \rightarrow \boxed{\text{T}}$

$40\% \text{ of } 30 = \boxed{} \rightarrow \boxed{\text{G}}$

$50\% \text{ of } 84 = \boxed{} \rightarrow \boxed{\text{S}}$

Scratch space:

CLUE 5**Fractions of a number - the last clue**

For the final security override, find the fraction of active optical sensors monitoring the perimeter.

First solve each problem. Then find each answer in the numbered list below and cross that sentence out. One sentence will be left - that is exactly what the villain did!

Step 1 - solve these:

$5/8 \text{ of } 16 = \boxed{}$

$4/6 \text{ of } 9 = \boxed{}$

$3/8 \text{ of } 32 = \boxed{}$

$5/10 \text{ of } 22 = \boxed{}$

$4/5 \text{ of } 5 = \boxed{}$

$4/8 \text{ of } 4 = \boxed{}$

$3/10 \text{ of } 30 = \boxed{}$

$1/4 \text{ of } 28 = \boxed{}$

$3/10 \text{ of } 10 = \boxed{}$

$1/3 \text{ of } 3 = \boxed{}$

$1/5 \text{ of } 25 = \boxed{}$

Step 2 - cross out the sentence with each answer:

1. The villain used the gravity dribble to bypass security, then calibrated their gyro gloves.
2. The villain hit a sonic hook shot into the control room, then adjusted their radar visor.
3. The villain used the gravity dribble to bypass security, then powered down their thermal vest.
4. The villain used a magnet catch on the display case, then calibrated their gyro gloves.
5. The villain hit a sonic hook shot into the control room, then zipped away with jet sneakers.
6. The villain used the gravity dribble to bypass security, then charged up their force wristband.
7. The villain hit a sonic hook shot into the control room, then charged up their force wristband.
8. The villain launched a laser spin past the guards, then zipped away with jet sneakers.
9. The villain used a magnet catch on the display case, then powered down their thermal vest.
10. The villain hit a sonic hook shot into the control room, then powered down their thermal vest.
11. The villain hit a sonic hook shot into the control room, then calibrated their gyro gloves.
12. The villain used the gravity dribble to bypass security, then adjusted their radar visor.

Answer Key

The Quantum Pitch Heist

Culprit: Virat Kohli

Laser Spin · Jet Sneakers · Left Handed · Neon Green · Static Electricity

Trail: Start 21 → Clue 1 19 → Clue 2 13 → Clue 3 5 → Clue 4 4 → Clue 5 1

Clue 1 (Fractions of a number): "THE VILLAIN DOES NOT WEAR GYRO GLOVES"

$\frac{2}{4}$ of 44 = 22 (T) · $\frac{3}{10}$ of 90 = 27 (H) · $\frac{1}{6}$ of 66 = 11 (Y) · $\frac{2}{6}$ of 114 = 38 (O) · $\frac{2}{8}$ of 148 = 37 (V) · $\frac{6}{10}$ of 50 = 30 (W) · $\frac{2}{8}$ of 68 = 17 (A) · $\frac{2}{10}$ of 120 = 24 (S) · $\frac{1}{10}$ of 100 = 10 (L) · $\frac{2}{10}$ of 65 = 13 (D) · $\frac{4}{6}$ of 39 = 26 (R) · $\frac{1}{8}$ of 32 = 4 (G) · $\frac{3}{6}$ of 58 = 29 (N) · $\frac{1}{10}$ of 20 = 2 (E) · $\frac{2}{8}$ of 100 = 25 (I)

Clue 2 (Multiplication facts (1-12)): "A LEFT HANDED PRINT WAS LEFT ON THE PANEL"

$1 \times 3 = 3$ (A) · $5 \times 4 = 20$ (S) · $9 \times 5 = 45$ (I) · $12 \times 9 = 108$ (T) · $8 \times 8 = 64$ (D) · $1 \times 11 = 11$ (N) · $6 \times 9 = 54$ (F) · $8 \times 7 = 56$ (O) · $7 \times 11 = 77$ (H) · $7 \times 10 = 70$ (E) · $7 \times 3 = 21$ (W) · $3 \times 5 = 15$ (P) · $9 \times 7 = 63$ (L) · $10 \times 6 = 60$ (R)

Clue 3 (Multi-step word problems): "STATIC ELECTRICITY"

Head Analyst Dr. Reed filled 2 boxes with 2 smart basketballs each, then found 79 more smart basketballs. How many smart basketballs are there in all? = 83 (S) · Head Analyst Dr. Reed collected 14 data tablets in the morning and 181 data tablets in the afternoon, then split them equally among 5 Kinetic Dome Lab Squad. How many data tablets did each get? = 39 (E) · Head Analyst Dr. Reed collected 38 trajectory trackers in the morning and 1 trajectory trackers in the afternoon, then split them equally among 3 Kinetic Dome Lab Squad. How many trajectory trackers did each get? = 13 (T) · There were 72 trajectory trackers in all. 3 Kinetic Dome Lab Squad used 14 trajectory trackers each. The other 2 Kinetic Dome Lab Squad shared the rest equally. How many trajectory trackers did each of the other Kinetic Dome Lab Squad get? = 15 (I) · There were 312 kinetic pads in all. 2 Kinetic Dome Lab Squad used 38 kinetic pads each. The other 4 Kinetic Dome Lab Squad shared the rest equally. How many kinetic pads did each of the other Kinetic Dome Lab Squad get? = 59 (C) · Head Analyst Dr. Reed collected 81 trajectory trackers in the morning and 213 trajectory trackers in the afternoon, then split them equally among 6 Kinetic Dome Lab Squad. How many trajectory trackers did each get? = 49 (A) · There were 552 data tablets in all. 32 data tablets were set aside. The rest were shared equally among 8 Kinetic Dome Lab Squad. How many data tablets did each get? = 65 (L)

Clue 4 (Percentages): "NEON GREEN HAIR STRANDS WERE ON THE FLOOR"

25% of 76 = 19 (N) · 75% of 12 = 9 (L) · 10% of 240 = 24 (E) · 75% of 60 = 45 (W) · 25% of 172 = 43 (D) · 20% of 35 = 7 (F) · 25% of 16 = 4 (A) · 10% of 400 = 40 (I) · 40% of 20 = 8 (H) · 5% of 780 = 39 (O) · 50% of 64 = 32 (R) · 25% of 116 = 29 (T) · 40% of 30 = 12 (G) · 50% of 84 = 42 (S)

Clue 5 (Fractions of a number): surviving statement is box 8 → Virat Kohli

$\frac{5}{8}$ of 16 = 10 · $\frac{4}{6}$ of 9 = 6 · $\frac{3}{8}$ of 32 = 12 · $\frac{5}{10}$ of 22 = 11 · $\frac{4}{5}$ of 5 = 4 · $\frac{4}{8}$ of 4 = 2 · $\frac{3}{10}$ of 30 = 9 · $\frac{1}{4}$ of 28 = 7 · $\frac{3}{10}$ of 10 = 3 · $\frac{1}{3}$ of 3 = 1 · $\frac{1}{5}$ of 25 = 5